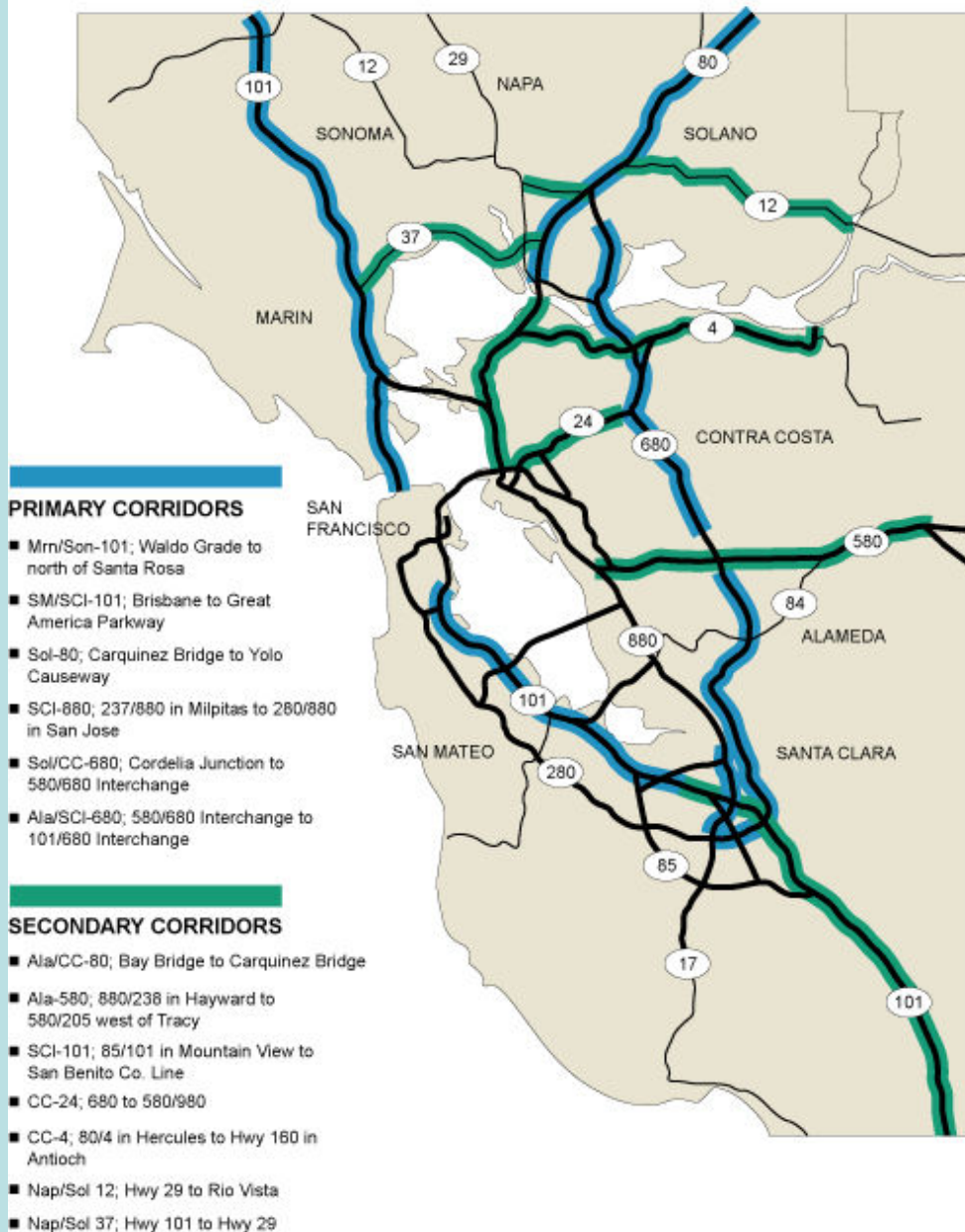


Tech Transfer Program Seminar
Arterial/Freeway Integration

Sean Nozzari, Caltrans
Albert Yee, MTC

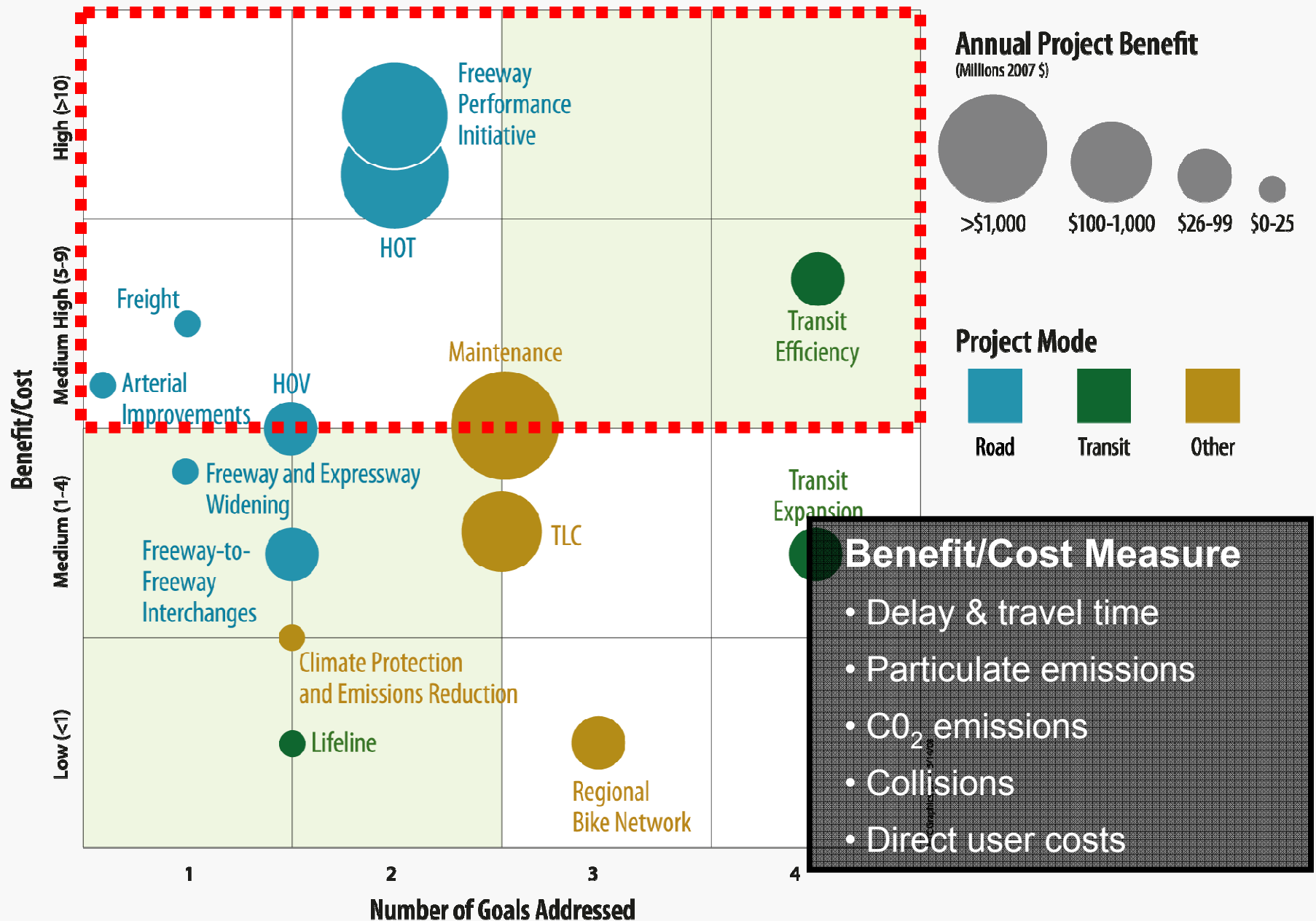
February 24, 2011

Corridor Studies



- Improve system efficiency with system management
- Complete HOV lane system
- Address freight issues
- Close key gaps in infrastructure

Project Performance Assessment



FREEWAY PERFORMANCE INITIATIVE T-2035

Ramp metering: \$250 M

Freeway detection: \$60 M

Message signs & cameras: \$115 M

Communications: \$175 M

Freeway TOS maintenance: \$25 M/yr

Arterial ITS maintenance: \$8.5 M/yr

** Non-escalated costs.*



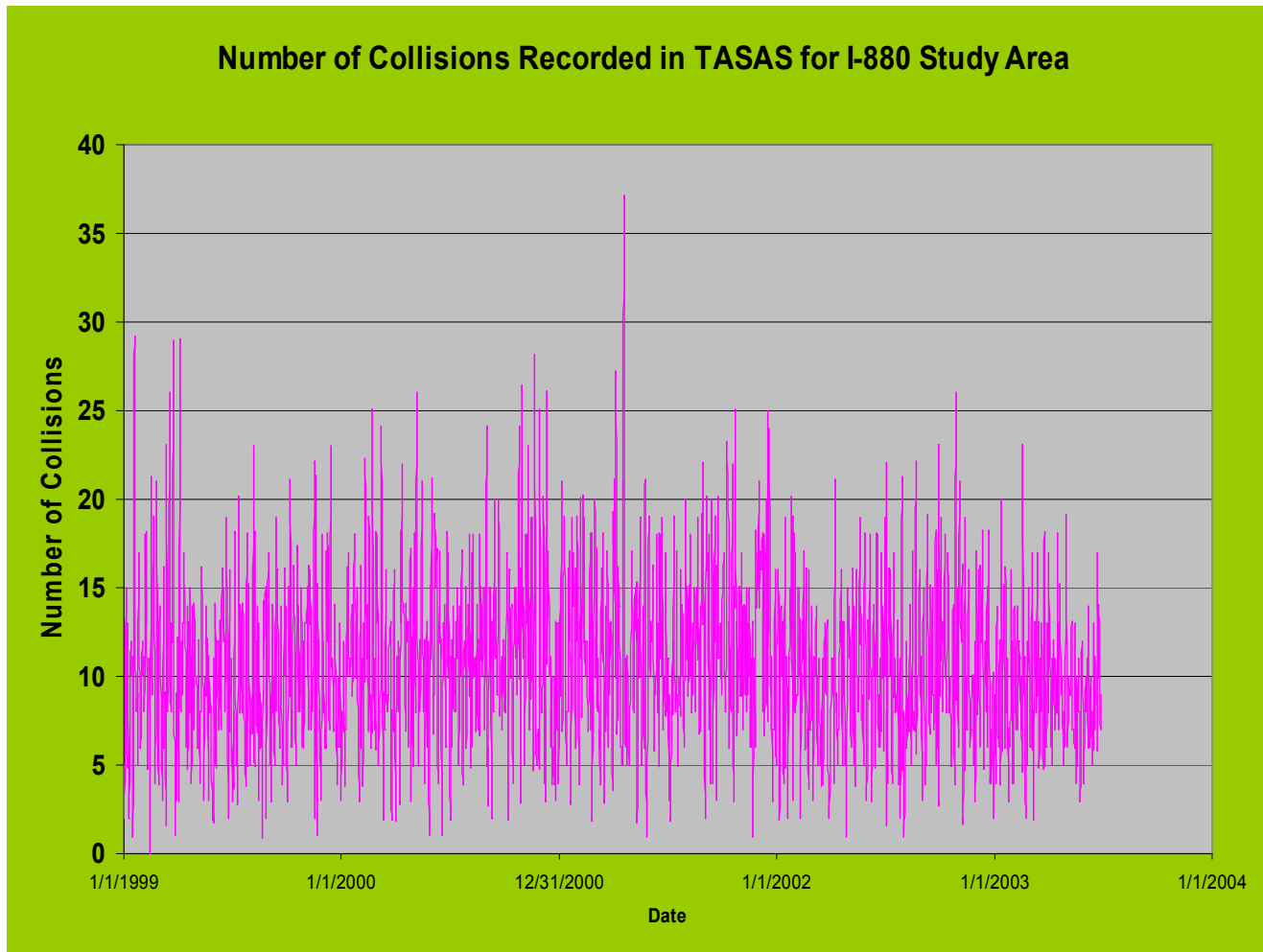
Ramp Metering



Incident Management



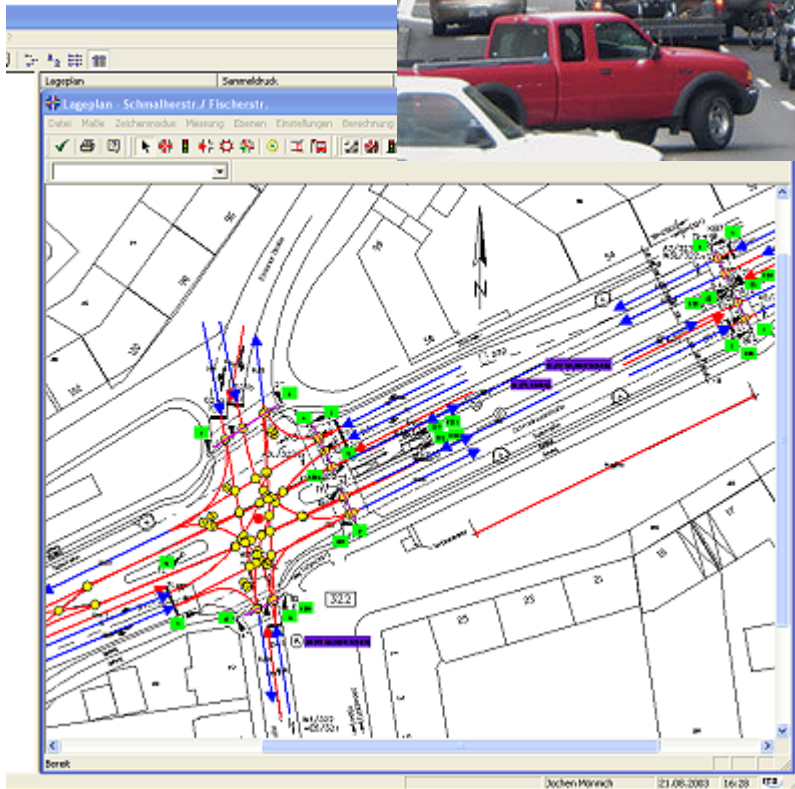
Traffic congestion caused by incidents is a major problem



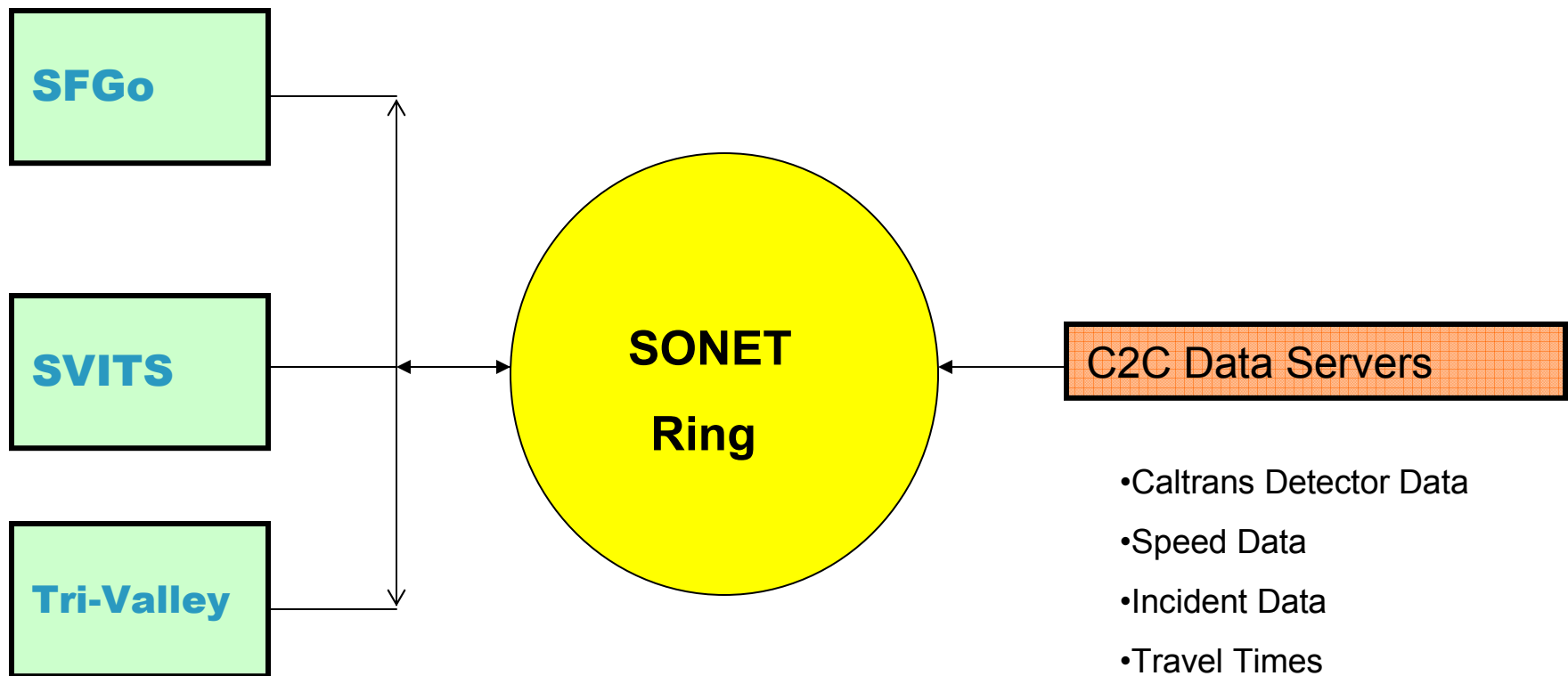
Freeway Service Patrol (FSP)



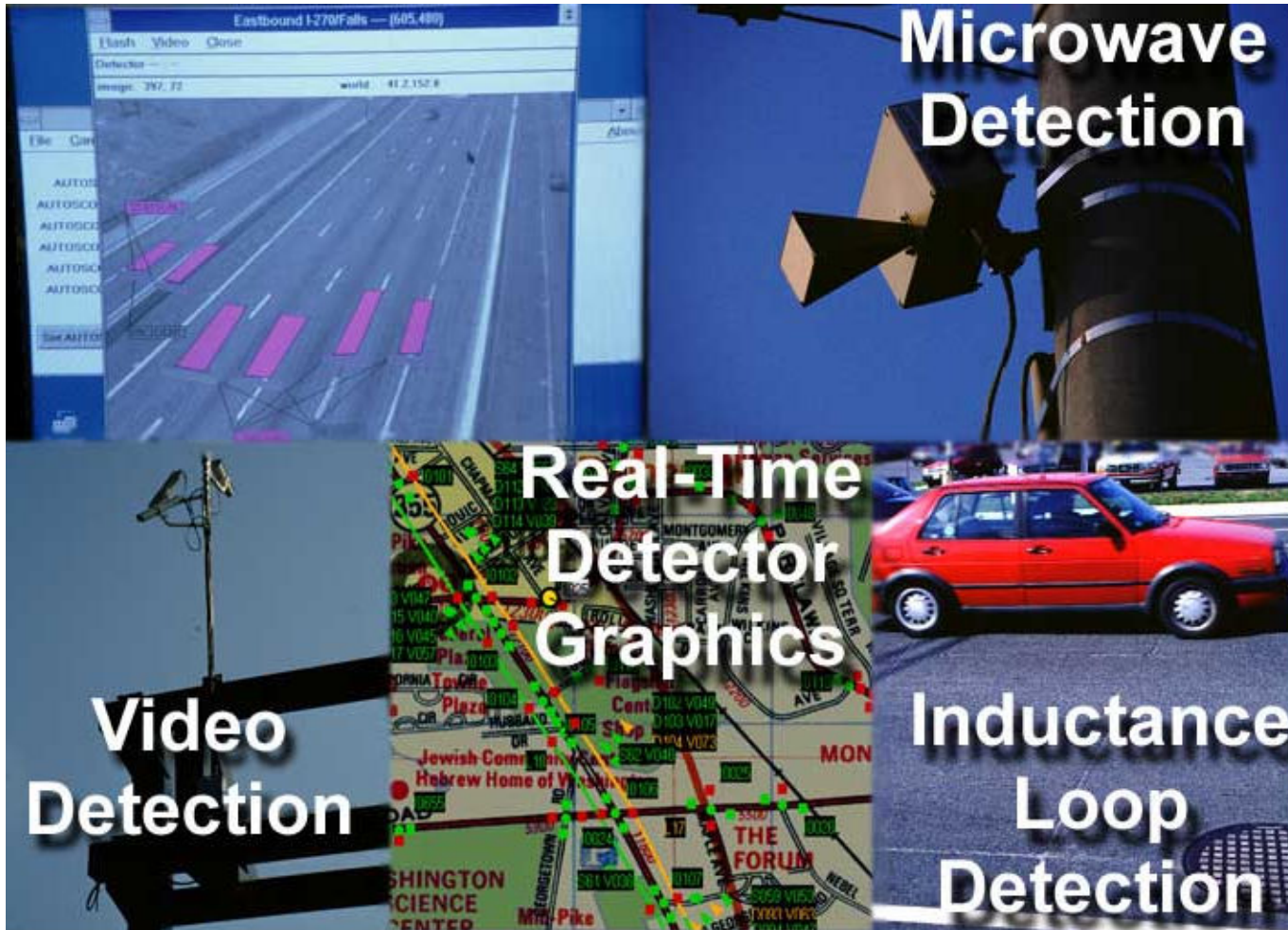
Traffic Signal Coordination

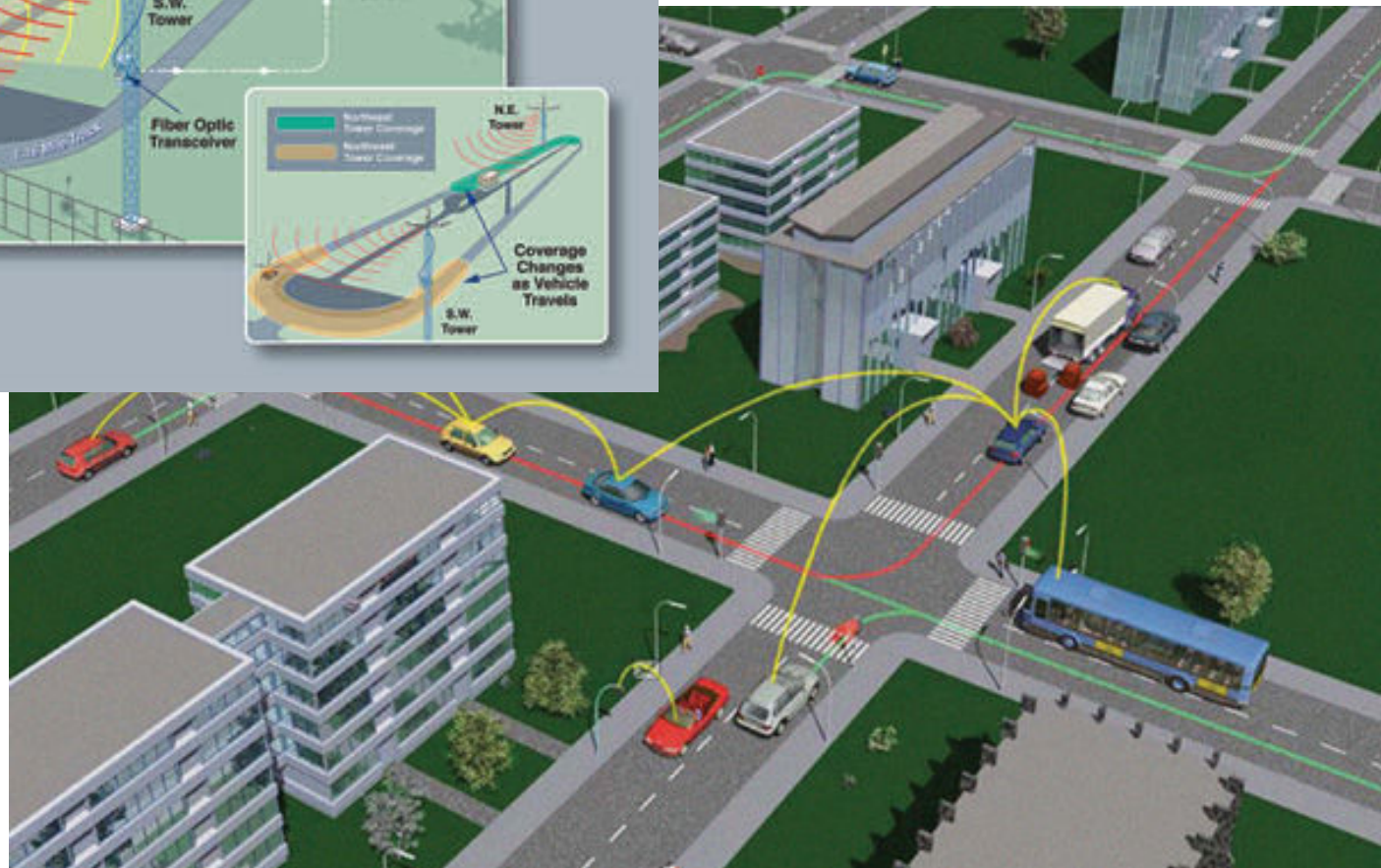
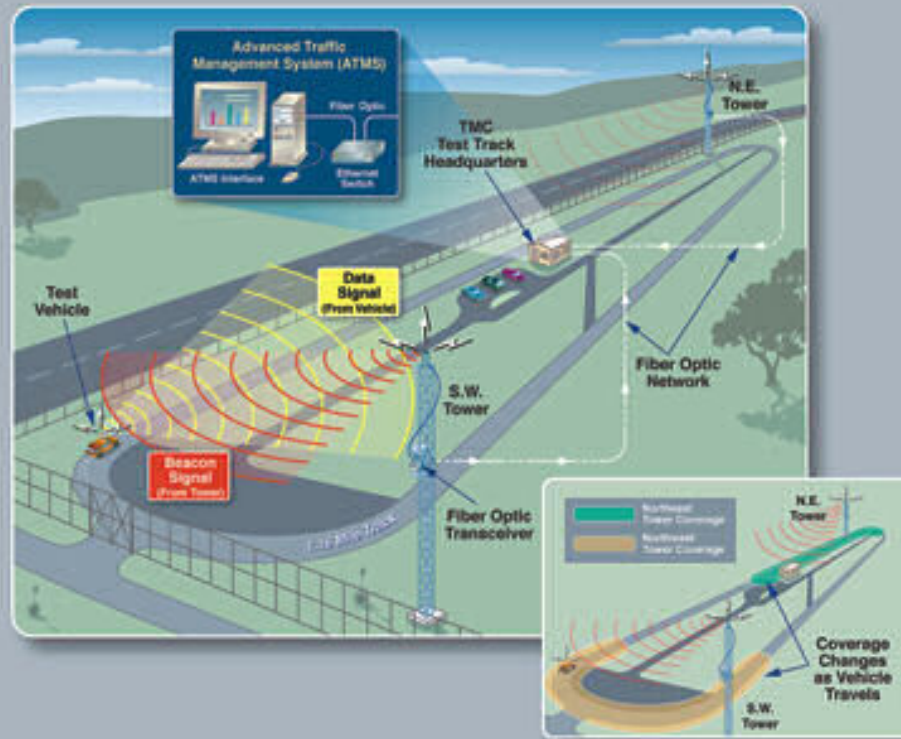


Center to Center System



New Technology



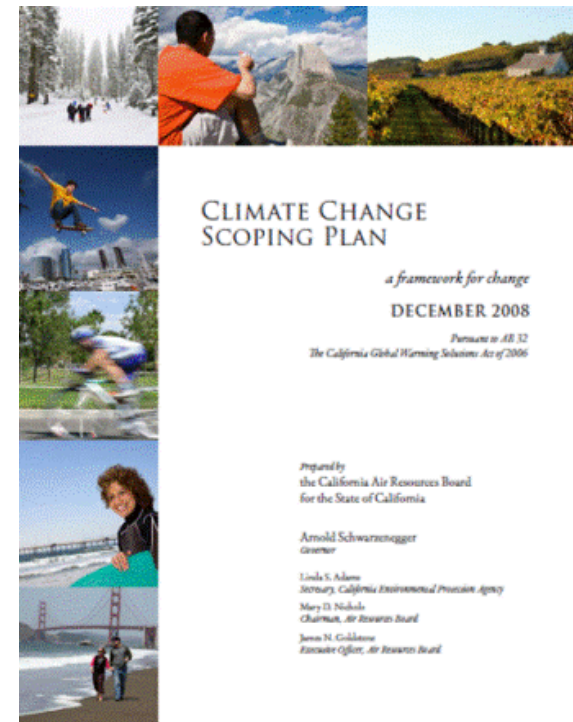


OneBayArea



AB 32 Global Warming Solutions Act of 2006

- AB 32 establishes the first comprehensive program of regulatory and market mechanisms in the nation to achieve GHG emissions reductions
- AB 32 sets GHG emissions limit for 2020 at 1990 level
 - Acknowledges that 2020 is not the endpoint
 - Points way towards 80% reduction by 2050
- CARB adopted a Scoping Plan to achieve AB 32's GHG emissions reduction target



SB 375 Basics

- **Regional transportation planning process part of AB 32**
 - Directs CARB to develop passenger vehicle GHG reduction targets for CA's 18 MPOs for 2020 and 2035
 - Adds Sustainable Communities Strategy as new element to Regional Transportation Plans
- **Reduces GHG emissions from driving in the Bay Area**
- **Houses the region's population at all income levels**



SCS Performance Targets

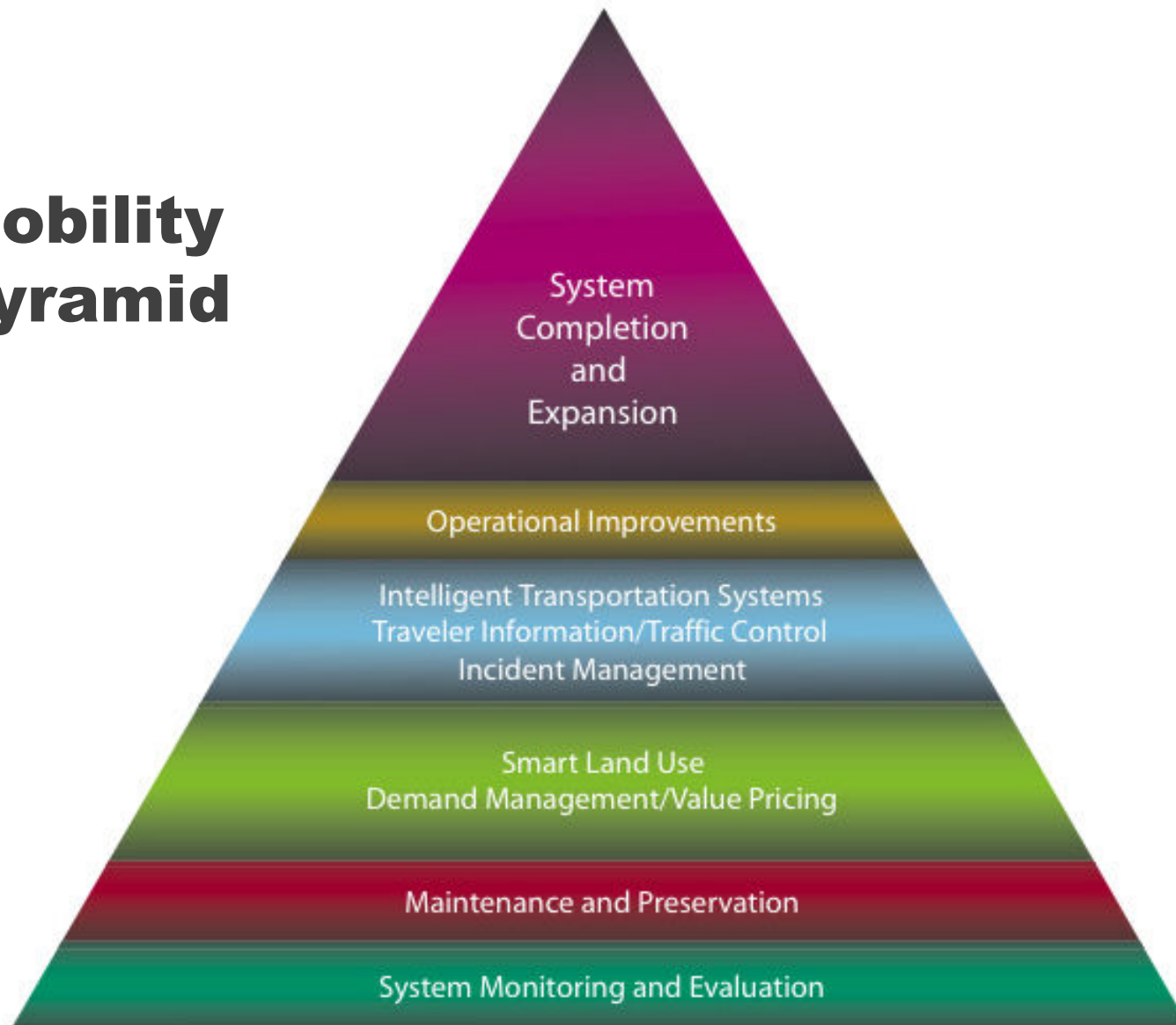
Adopted by ABAG and MTC in January 2011

1	Reduce per capita GHG emissions from cars and light-duty trucks by 15%	Statutory Targets (2)
2	House 100% of the region's growth by income level and without displacing current low-income residents	
3	Reduce premature deaths from exposure to particulate emissions by 10%	Voluntary Targets (8)
4	Reduce injuries and fatalities from all collisions by 50%	
5	Increase average daily walking and biking time per person by 60%	
6	Direct all non-agricultural development within the urban footprint	
7	Reduce the share of low-income and lower-middle income residents' household income consumed by transportation and housing by 10%	
8	Increase gross regional product (GRP) by 90%	
9	Decrease non-auto per-trip travel time by 10% ; Decrease automobile vehicle miles traveled by 10%	
10	Maintain the transportation system in a state of good repair <ul style="list-style-type: none"> - Increase average Road Pavement Condition Index to 75 or better - Decrease distressed state highway lane-miles to less than 10% - Reduce average transit asset age to 50% of useful life 	

How Bay Area Workers Commuted, 2005

- **Drove Alone** 69%
- **Carpooled** 11%
- **Public Transportation** 10%
- **Worked at Home** 5%
- **Walked or Bicycled** 4%
- **Other** 1%

Mobility Pyramid



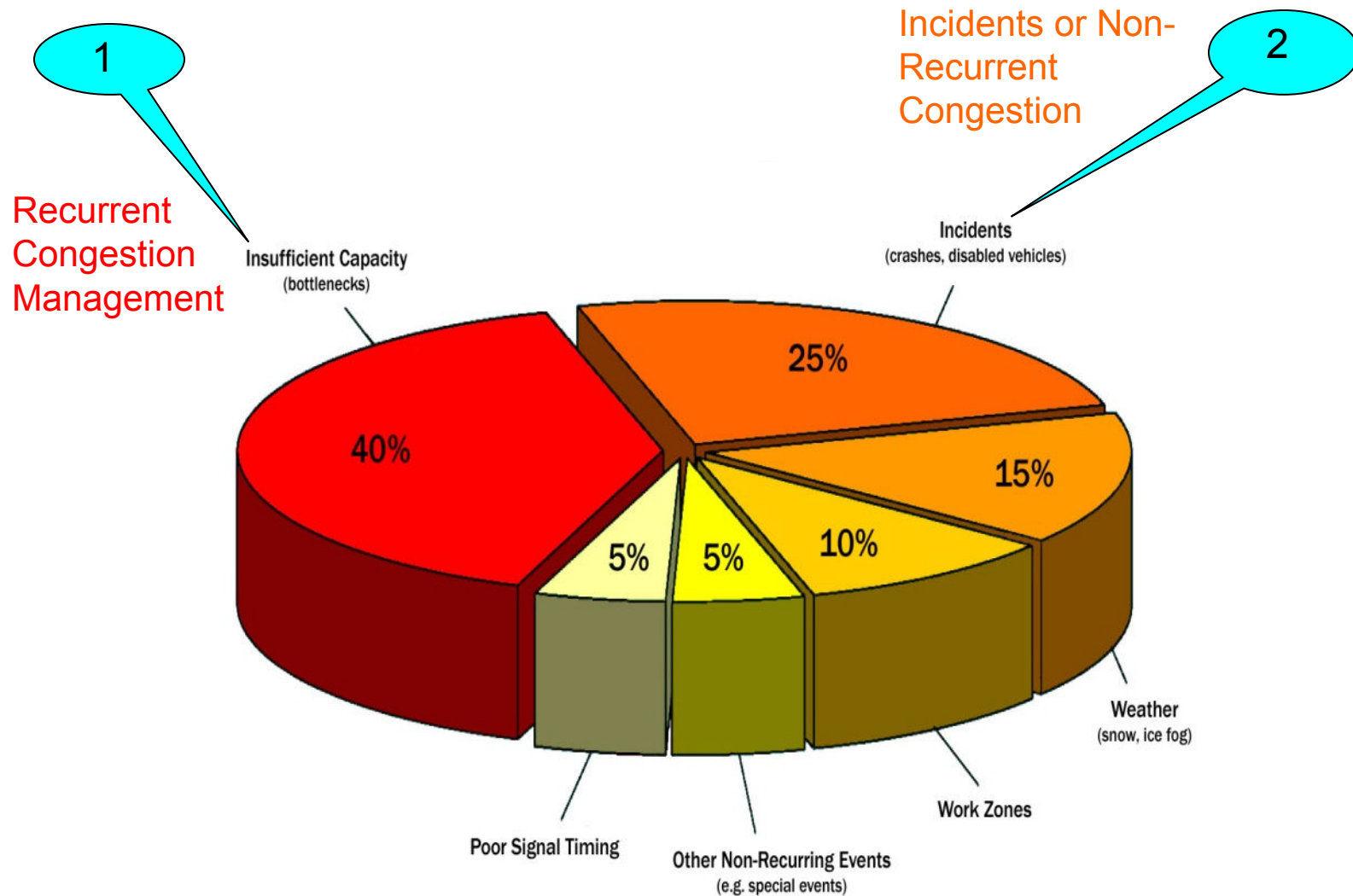
Caltrans - District 4



Overview:

- Encompasses nine Bay Area counties of:
Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Solano, Sonoma, and Santa Clara
- 3,500 employees with an annual operating budget of \$450 M
- 7,600 lane miles of highways, including 420 miles of carpool lanes
- Seven toll bridges:
Antioch, Benicia, Carquinez, Richmond-San Rafael, San Mateo-Hayward, San Francisco-Oakland and Dumbarton

Our Common Goal: Congestion Management



Source: Federal Highway Administration, 2003

Intelligent Transportation Systems (ITS) for Improved Mobility

FPI & ITS support Congestion Management in the Bay Area in various ways:

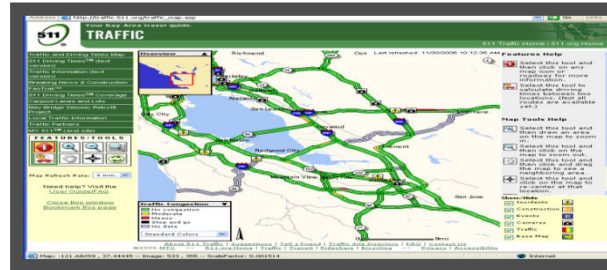
- **Traffic Monitoring & Performance Measurement**
- **Incident Management & Enhanced Detours for SMART Corridors**
- **Traveler Information**
- **Corridor Management**
- **State of the Art Practices**

San Francisco Bay Area Traffic Operations System (TOS)

24 / 7 Transportation Management Center



511 Traveler Information System



Freeway Service Patrol



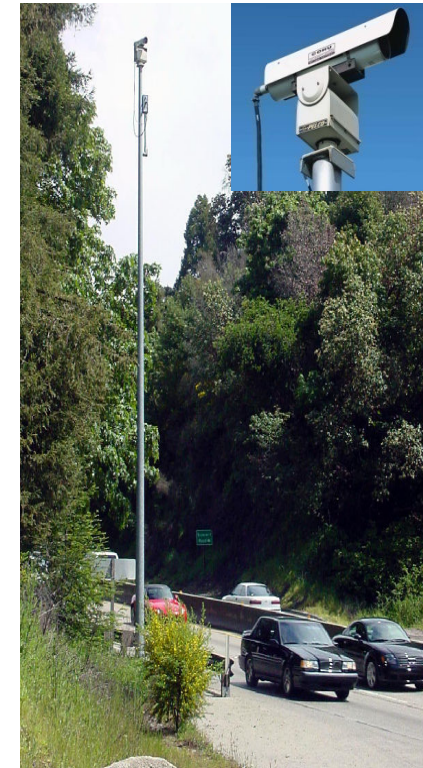
134 Changeable Message Signs



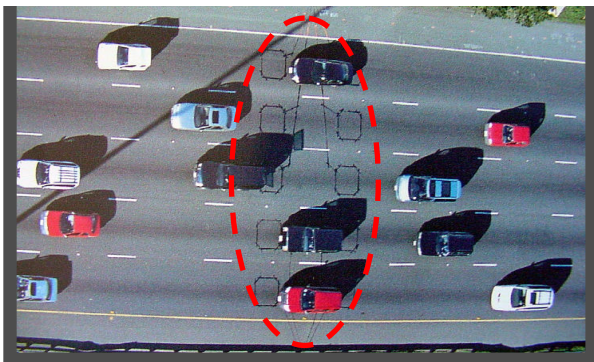
25 Highway Advisory Radios



300 CCTV Cameras



1500+ Traffic Monitoring Stations

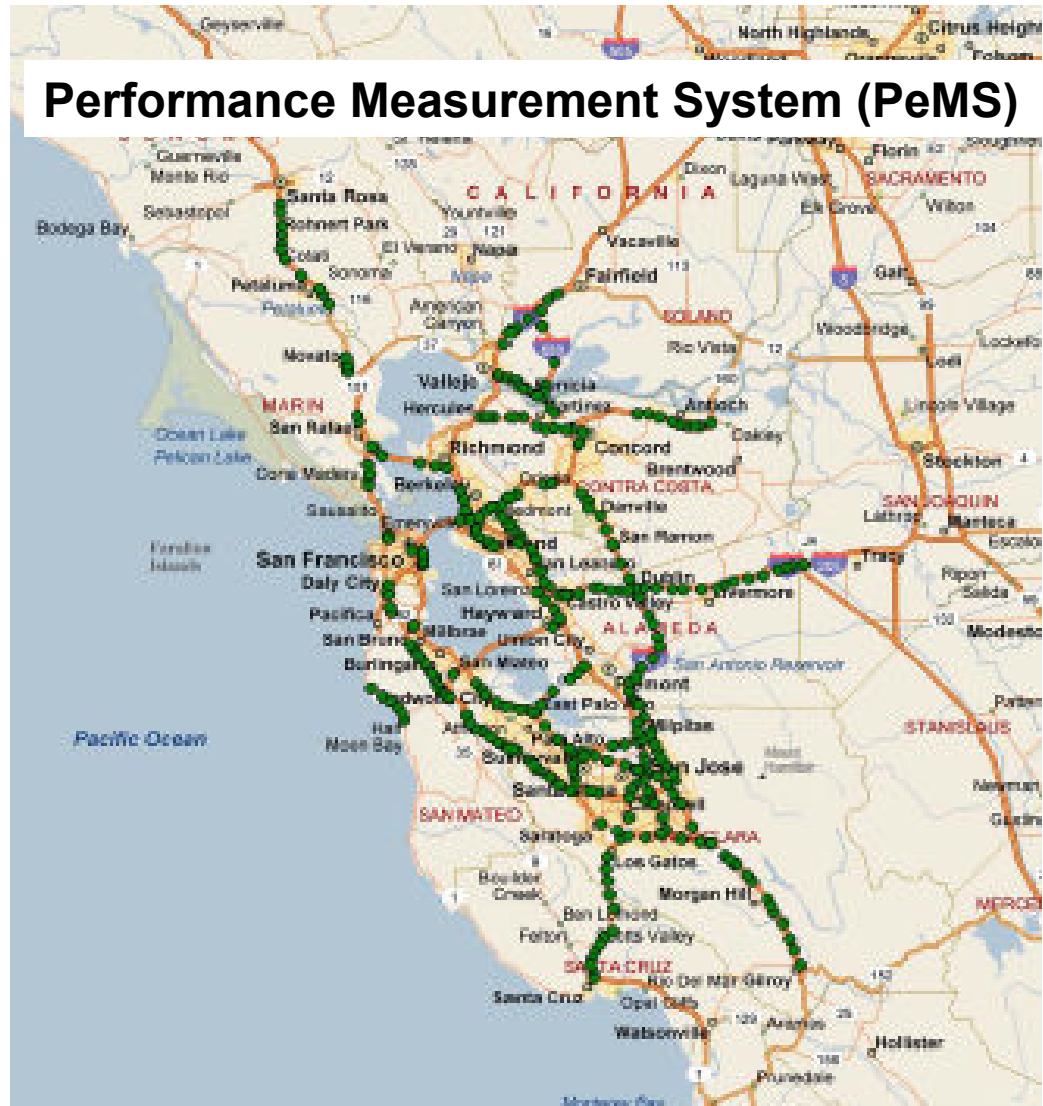


298 Ramp Meters



Intelligent Transportation Systems (ITS) for Performance Measurement

- Our goal is to Build out the Bay Area Traffic Operations System (TOS) to have continuous coverage throughout the highways for 24/7 performance monitoring and operations.



San Francisco Bay Area
Incident Management

CHP CAD: Incidents Reported per Day

total “incidents” reported	2700
traffic hazard reports	660
accident reports	340
reports involving Caltrans field activities	270
reports passed to Caltrans for review	300
reports requiring action by Caltrans	50

San Francisco Bay Area Incident Management (Goals and Objectives)

- Caltrans & CHP's goal is to clear major highway incidents within **90 minutes** or less
- Caltrans and CHP responded to **1,316 major incidents** in the Bay Area last year
- More than **70% of incidents** last year were cleared in less than 90 minutes



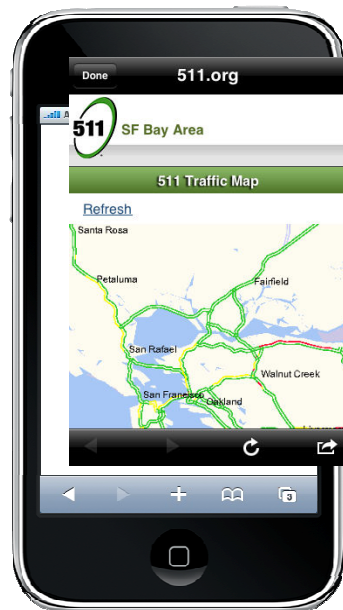
San Francisco Bay Area Incident Management Objectives

- **Responder safety**
- **Safe and quick clearance of incidents**
- **Prompt reliable interoperable communications**
- **Enhanced inter-agency coordination, cooperation, and collaboration**
- **Caltrans, CHP, and MTC are partnering to conduct regional stakeholder workshops, including all City/County allied agency partners such as Fire/EMS, Coroner, law enforcement, tow service operators, and public works/traffic engineers**



- Traffic Conditions on Phone, Web & Mobile
- Driving Times™ on Phone & Web
- Driving Times on Caltrans' CMS
- Multi-modal Trip Planning
- 511.org and m.511.org

San Francisco Bay Area 511 Real Time Trip Data



511 SF Bay Area

511.ORG TRANSIT TRAFFIC RIDESHARE BICYCLING

511 Home Get Around Go Green Call 511 About 511 Mobile & Apps

Breaking News Stop Scrolling

[Accident Blocks Lane Northbound Hwy. 1 after Jenner. For more info](#)

DIAL 511 IT'S FREE

Public Transit Trip Planner Mobile Tool

Start Address, Intersection or Landmark City CA

End Address, Intersection or Landmark City CA

When Leave at Wednesday 08/25/2010

Time 3:40 PM

Preferences: Fastest Trip, Adult Fare, Max walking 1/2 Mile

[Additional Options](#) [Plan Trip »](#)

[Schedules, maps, and other transit info](#)

Current Traffic Conditions Mobile Tool

Map showing traffic congestion in the San Francisco Bay Area. Legend: No congestion (green), Moderate (yellow), Heavy (red), Stop and go (black), Closed (purple), No data (grey).

Real-Time Transit Departures New!

Agency/Stop - or - Stop ID (look up Stop ID)

Transit Agency: Select an Agency

Route: Select a Route

Direction: Select a Direction

Stop: Select a Stop

[Departure Times FAQ](#) [Get Times »](#)

[Real-time SMS/texting](#)

Regional Transportation Tweets

Presidio Parkway There's not much left! Check out demo of the former Public Storage buildings from one of our new construction webcams! <http://ow.ly/2uPdk> about 1 hour ago

SpareTheAir Text STANATION to 404040 for a free MP3 track and a chance to win a Live Nation VIP Concert Experience! <http://ow.ly/2uOkv> about 1 hour ago

BayAreaClipper AC Transit accepting applications for Youth Clipper cards. Register today and tomorrow (Aug 25-26) from 10 a.m. to 2 p.m. at Berkeley High! 4 hours ago

Powered by **twitter** Join the conversation

Announcements

Text 4 Departures [Departure Times Texting](#)
Text your Stop ID# for real-time transit departures.

511 Mobile
Access popular features on your mobile device.

Get Real-Time Info!
Traffic/transit info sent to your smart phone.

Get your Clipper card now!
Sign up today.

FasTrak

Get FREE FasTrak Tolls!
Now you can get up to \$10 in FREE tolls when you pick up FasTrak at select retail locations. [Find out more](#)

Get Driving Times

[Current Driving Times »](#)

[Future Driving Times »](#)

[Breaking news & announcements](#)

Find a Carpool

FREE GAS Get free gas for carpooling! Enter your start and end locations below to get started.

Start City or Zip

End City or Zip

[Search »](#)

[Already Registered?](#)

State of the Art Practices: Integrated Corridor Management(ICM)

10 corridor system
management plans
completed,
embracing:

- Freeways
- Arterial
- Transit
- Traveler Info



State of the Art Practices: Active Traffic Management & SMART Corridors



State of the Art Practices: Proposed Bay Area Express Lanes Network

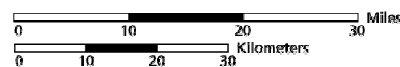
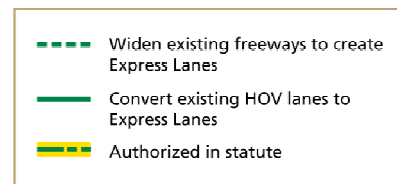
Features:

- **Strong North-South connection**
- **460 miles (330 miles conversion 130 miles new)**
- **Emphasizes connected segments with: low cost, high-revenue, operational benefits**

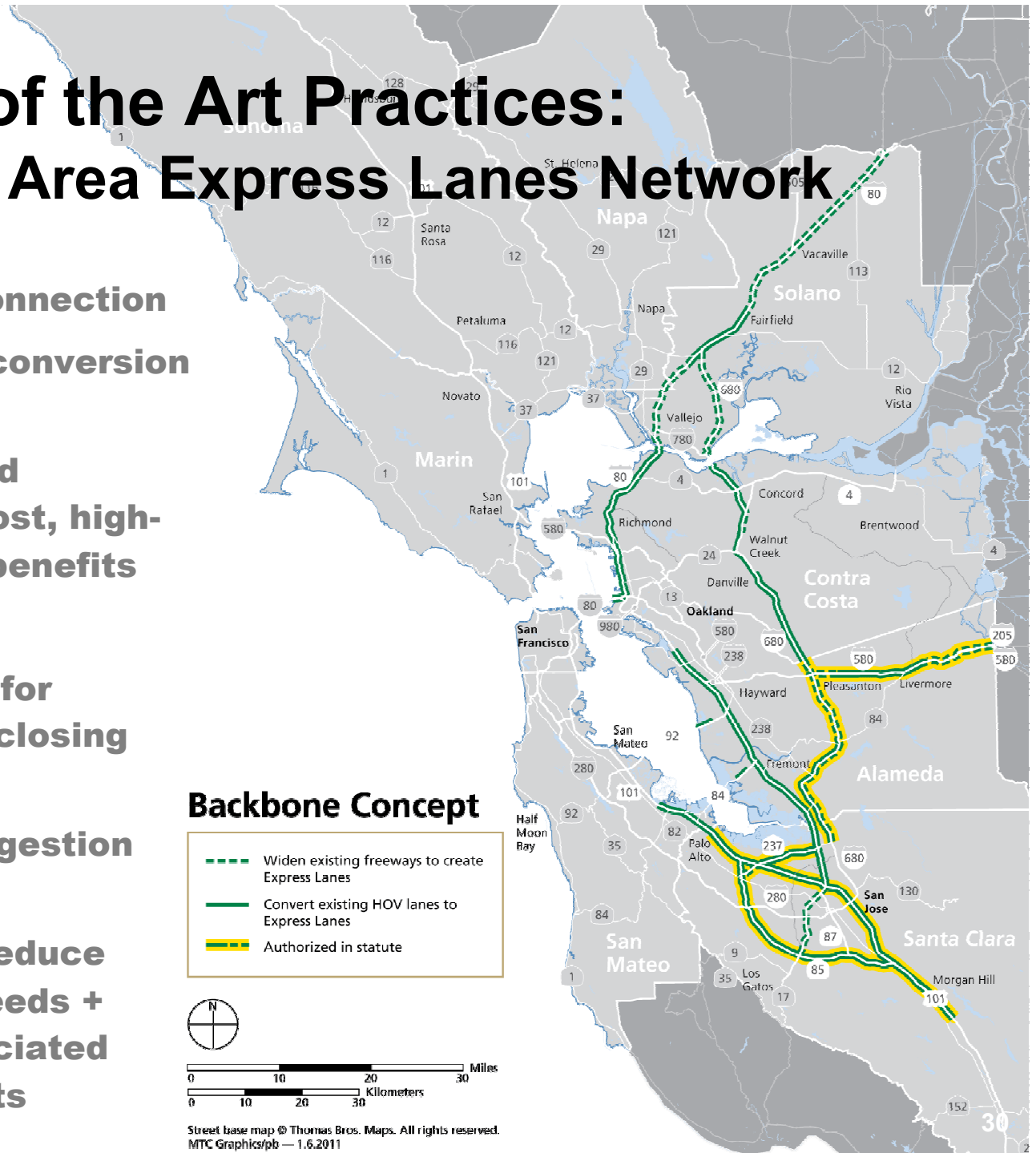
Benefits:

- **Improve time-savings for carpools & transit by closing gaps in the network**
- **Provide a reliable congestion free option for others**
- **In mixed flow lanes, reduce volumes, enhance speeds + reduce delays & associated greenhouse gas effects**

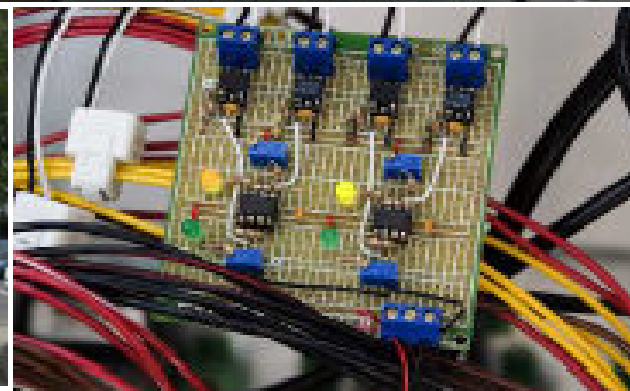
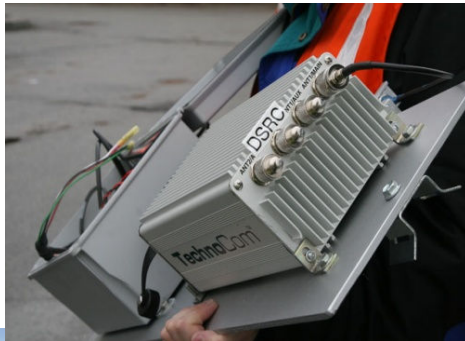
Backbone Concept



Street base map © Thomas Bros. Maps. All rights reserved.
MTC Graphics/pb — 1.6.2011



State of the Art Practices: IntelliDrive & Bay Area VII Testbed



State of the ART Practices: Arterial Traffic Data

